## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference G69016.GE.cp				FOR FURTHER ACTION  See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)						
International application No. PCT/EP 03/11397				International filing date 15.10.2003	(day/mont	h/year)	Priority date (day/month/year) 31.10.2002			
B65	5D41/		ent Classification (IPC) or bo	oth national classification	and IPC					
1	icant OPLA	STIC	S.P.A. et al.	<u> </u>						
1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.									
2.	This	REP	ORT consists of a total of	of 5 sheets, including t	his cover	sheet.				
	This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and be drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).									
	These annexes consist of a total of 5 sheets.									
3.	Thie	reno	rt contains indications re	lating to the following it	eme:					
J.		-		iating to the lollowing in	cirio.					
	] 	$\square$	Basis of the opinion Priority							
	111		•	oninion with regard to n	ovelty in	ventive sten a	nd industrial amplicability			
	IV		Lack of unity of inventi-	on-establishment of opinion with regard to novelty, inventive step and industrial applicability						
	V   Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial app citations and explanations supporting such statement					ventive step or industrial applicability;				
VI ☐ Certain documents cited				ed						
	VII   Certain defects in the internation			nternational applicatior	tional application					
	VIII		Certain observations o	n the international app	lication					
Date	Date of submission of the demand					completion of th	's report			
25.0	25.05.2004					2005				
	Name and mailing address of the international preliminary examining authority:					ed Officer	ganduchus Potoniony.			
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465						cqua, V ne <sub>.</sub> No. +49 89 2	399-7983			

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/11397

1. With regard to the **elements** of the international application (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)):

	Des	scription, Pages					
	1, 2	2, 5-10	as originally filed				
	3, 3	Bbis, 4	received on 08.10.2004 with letter of 07.10.2004				
	Cla	ims, Numbers					
	1-1	4	received on 08.10.2004 with letter of 07.10.2004				
	Dra	wings, Sheets					
	1/3-	3/3	as originally filed				
2.	With regard to the <b>language</b> , all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.						
	These elements were available or furnished to this Authority in the following language: , which is:						
		the language of a tra	anslation furnished for the purposes of the international search (under Rule 23.1(b)).				
		the language of pub	lication of the international application (under Rule 48.3(b)).				
		the language of a tra Rule 55.2 and/or 55.	anslation furnished for the purposes of international preliminary examination (under 3).				
3.	Witl inte	h regard to any <b>nucl</b> e rnational preliminary	eotide and/or amino acid sequence disclosed in the international application, the examination was carried out on the basis of the sequence listing:				
		contained in the inte	rnational application in written form.				
		☐ filed together with the international application in computer readable form.					
		furnished subsequer	ntly to this Authority in written form.				
	☐ furnished subsequently to this Authority in computer readable form.						
	☐ The statement that the subsequently furnished written sequence listing does not go beyond the disc in the international application as filed has been furnished.						
		The statement that the listing has been furn	he information recorded in computer readable form is identical to the written sequence ished.				
4.	The	amendments have r	esulted in the cancellation of:				
		the description,	pages:				
		the claims,	Nos.:				
		the drawings,	sheets:				

## INTERNATIONAL PRELIMINARY **EXAMINATION REPORT**

International application No.

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5. 🗆	This report has been established as if (some of) the amendments had not been made, since they have
	been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

No:

Yes: Claims Claims 1-14

Inventive step (IS)

Yes: Claims

1-14

No:

Industrial applicability (IA)

Yes: Claims

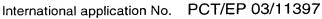
Claims

1-14

No: Claims

2. Citations and explanations

see separate sheet



## Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. State of the art

Reference is made to the following documents:

D1: US-A-3 924 771 (CLEFF GUNTHER) 9 December 1975 (1975-12-09)

D2: GB- 718 226 A (NAAMLOZE VENNOOTTSCHAP WH VAN DEN TOORN'S INDUSTRIEELE CAPSULEFABRIEK ) 10 November 1954 (1954-11-10)

D3: US 2002/003121 A1 (QUERBACH PETER ET AL) 10 January 2002 (2002-01-10)

## 2. Novelty

The document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1, and discloses (the references in parentheses applying to this document, see in particular from column 2 line 60 to column 3 line 68, from column 6 line 3 to column 7 line 6 and figure 12):

a method for forming a closure and security device comprising a screw stopper (16) and a security capsule (1) and applying it to containers provided with an externally threaded circular mouth (110), the method comprising the following steps:

- -connecting to a metal stopper destined to become a screw stopper once applied to the container a capsule forming foil in such a manner as to provide the stopper with a skirt projecting by a determined portion from the free edge of the stopper to obtain a stopper-skirt combination
- -applying the stopper-skirt combination to the mouth of the relative container -making the skirt rigid with the container by known capsule techniques depending on the type of foil used, to obtain a stopper-capsule.

The subject-matter of claim 1 therefore differs from this known method in that: it additionally comprises the step of rolling the stopper to form on its lateral wall a thread matching the external thread on the mouth of the container.

The subject-matter of independent claim 1 is therefore novel (Article 33(2) PCT).

#### 3. Inventive step

### INTERNATIONAL PRELIMINARY International application No. PCT/EP 03/11397 **EXAMINATION REPORT - SEPARATE SHEET**

D1 discloses a method from which the subject-matter of claim 1 differs in that the step consisting of applying the stopper skirt combination to the mouth of the container comprises rolling the stopper to form on its lateral wall a thread matching the external thread on the mouth of the container.

The problem to be solved by the present invention may therefore be regarded as how to perform the known method by using for the stopper skirt combinations a filling and closing line already used for common capsules without a thread.

The solution proposed in claim 1 of the present application is to be considered as involving an inventive step (Article 33(3) PCT) because all the relevant documents cited in the search report disclose methods for combining a skirt with a rigid, non-deformable stopper, which is always shown as having a thread already formed (made of plastic or of metal), starting from D1 or D2 the skilled person would never take into account to deform the stopper once the skirt has been connected thereto.

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already in the form of a tubular element, and is applied to the mouth of bottles (especially containing wine) which have already been closed by a conventional cork or synthetic stopper, or (as in the aforesaid case) by a screw stopper with ring. The tubular element is also provided with a metal or plastic "headpiece" which closes it upperly to form a hood and is then made to adhere, by rolling or by heating (depending on whether the foil is of metal or of heat-shrinkable plastic material), to the relative portion of the bottle neck.

In all cases an intact capsule is the guarantee that the bottle contents have not been tampered with or replaced.

Returning to the aforesaid known case of a closure device provided with both a 10 . screw stopper with ring and a capsule, it is the intactness of this latter (and not of the teeth on the ring of the screw stopper) which provides the guarantee that the container has not been tampered with.

Although this latter solution provides a guarantee against tampering of the container contents, it means that two separate independent operations have to be performed on the automatic container filling and closure line (in the case of bottles, the so-called bottling line), namely the application of the screw stopper with ring to the threaded mouth of the container and the subsequent application of the capsule to this stopper, the capsule then being made rigid by rolling or by heat shrinkage (depending on whether it is of metal or heatshrinkable plastic material). The need to perform the two aforedescribed operations one after the other evidently results in a considerable lengthening of the bottling time and a non-negligible increase in production costs. It should also be noted that to open a container provided with such a closure and security device, the capsule must firstly be removed. This is difficult, or even impossible, if using the hands alone. Consequently an implement such as a knife has normally to be used.

In this respect, this drawback can be overcome by using a capsule provided with a pull tab, i.e. a strip incorporated into the capsule and having a projecting end which when pulled manually tears the capsule, which can then be easily removed with the hands. The pull tab represents however an additional cost.

An object of the present invention is to provide a method which enables a closure and security device comprising a screw stopper and capsule to be formed and applied to containers with an externally threaded circular mouth,

US-A-3 924 771 discloses a threaded closure-member, or stopper, which can be screwed on the threaded neck of a bottle. A cap wall, or skirt, made of shrinkable foil material, is then applied to the stopper and also to the adjacent bottle-neck portion, the stopper being already screwed to the bottle neck. Subsequently, by heating, the skirt shrinks, thereby adhering to the stopper and bottle neck.

GB 718 226 A discloses a threaded metal cap, or stopper, to be also screwed on the threaded neck of a bottle before a skirt is fixed to the stopper by an adhesive.

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in considerably less time (with significant benefit to production costs) than the aforedescribed known method in which the screw stopper and capsule are applied to the container in two successive steps.

Another object of the invention is to provide a closure and security device of the aforesaid type which does not present the aforedescribed drawbacks of closure devices with a screw stopper provided with a security ring.

The initially stated object is attained by the method of the present invention, comprising the following steps:

connecting to a screw stopper, or to a stopper destined to become a screw stopper once applied to the container, a capsule forming foil in such a manner as to provide the stopper with a skirt projecting by a determined portion from the free edge of the stopper, to obtain a stopper-skirt combination;

applying the stopper-skirt combination to the mouth of the relative container; ...making the skirt rigid with the container by known capsule techniques,

In this manner the stopper-capsule can be applied to the relative container in a significantly less time than the time required in the known method, which firstly applies the screw stopper and then the capsule.

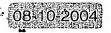
depending on the type of foil used, so as to obtain a stopper capsule.

It should be noted that hereinafter, unless otherwise specified, the term "screw stopper" also indicates a stopper which is not yet a screw stopper, but is destined to become a screw stopper (for example, by rolling in the case of a metal stopper).

It is also important to note that the method of the invention can be implemented by using a dispensing device for the stopper-skirt combinations which is of the type currently already used for known capsules, and which can be used on nearly all existing automatic filling and closing lines without these latter being penalized in terms of their production capacity, as instead happens in the case of the known method in which the screw stopper and the capsule are applied in two successive steps.

30 If the stopper is of metal, it is conveniently initially without the thread, the aforesaid step of the method consisting of applying the stopper-skirt combination to the mouth of the relative container necessarily comprising in this case rolling the stopper to form on its lateral wall a thread matching the external thread of the container mouth.

35 If however the stopper is of plastic material and already presents the internal



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### **CLAIMS**

1. A method for forming a closure and security device (22) comprising a screw stopper (10A) and a security capsule (16A) and applying it to containers provided with an externally threaded circular mouth, the method comprising the following steps:

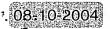
connecting to a metal stopper destined to become a screw stopper once applied to the container (20), a capsule-forming foil (12) in such a manner as to provide the stopper (10) with a skirt (16) projecting by a determined portion from the free edge of the stopper (10), to obtain a stopper-skirt combination (18; 18A; 18B);

applying the stopper-skirt combination (18; 18A; 18B) to the mouth of the relative container (20);

making the skirt (16) rigid with the container (20) by known capsule techniques, depending on the type of foil used, to obtain a stopper-capsule (22);

characterized in that, before making the skirt (16) rigid with the container (20), the stopper (10) is rolled to form on its lateral wall a thread matching the external thread on the mouth of the container (20).

- 2. A method as claimed in claim 1, wherein the foil used to form the skirt is in the form of substantially trapezoidal foil pieces (12).
- 3. A method as claimed in claim 1, wherein the foil used to form the skirt (16) is in the form of tubular elements.
- 4. A method as claimed in claim 1, wherein the foil used to form the skirt (16) is metallic.
- 5. A method as claimed in claim 1, wherein the foil used to form the skirt(16) is of a heat-shrinkable plastic material.
  - 6. A method as claimed in claim 4, wherein the skirt (16) and stopper (10) are made mutually rigid by gluing.
- 7. A method as claimed in claim 5, wherein the skirt (16) and stopper (10) are made mutually rigid by heat-shrinkage and/or gluing.
  - 8. A method as claimed in claim 5, wherein the step consisting of making the skirt (16) rigid with the container (20) comprises heating the skirt (16) to cause it to heat-shrink.
- 9. A method as claimed in claim 4, wherein the step consisting of making35 the skirt rigid with the container comprises rolling.





- 10. A method as claimed in claim 4, wherein the foil (12) is of aluminium or tin.
- 11. A method as claimed in claim 4, wherein the foil (12) is a polylaminate.
- 12. A method as claimed in claim 1, wherein the foil (12) used presents means (24) which, with the closure and security device (22) applied to the container (20), enable the relative capsule (16A) to be torn as a result of or prior to the unscrewing of the screw stopper (10A).
  - 13. A method as claimed in claim 12, wherein the means which enable the capsule (16A) to be torn consist of using a foil (12) of a thickness which enables the capsule (16A) to tear when the screw stopper (10A) is unscrewed.
  - 14. A method as claimed in claim 12, wherein the means which enable the capsule (16A) to be torn consist of using a foil (12) presenting one or more weakening lines or zones (24), in correspondence with which tearing of the capsule (16A) takes place when the stopper (10A) is unscrewed.

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